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TITLE OF THESIS/TITRE DE LA THÈSE MENTAL STATE EXPLANATIONS: THE SYNTHETIC SIGNIFICANCE OF THEIR ANALYTIC CONCEPTION

UNIVERSITY/UNIVERSITÉ UNIVERSITY OF ALBERTA, EDMONTON, ALBERTA, CANADA

DEGREE FOR WHICH THESIS WAS PRESENTED/ GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE Ph.D.

YEAR THIS DEGREE CONFERRED/ANNÉE D'OBTENTION DE CE GRADE 1975

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MENTAL STATE EXPLANATIONS: THE SYNTHETIC SIGNIFICANCE OF THEIR ANALYTIC CONCEPTION

by

© BRIAN DOUGLAS HAIG

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

SPRING, 1975

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance a thesis entitled "Mental State Explanations: The Synthetic Significance of their Analytic Conception" submitted by Brian D. Haig in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

It has been argued by numerous philosophers of mind that attempts by scientifically oriented psychologists to explain human behaviour by appeal to mental states founder because such endeavours are grounded upon a logically incoherent appreciation of what constitutes an acceptable mental state explanation. These philosophers claim that, while it is legitimate for scientific psychology to speak of the causal explanation of movements, it is a category error to proffer such explanations for human actions.

I undertake a critical examination of the philosopher of mind's chief reasons for judging as conceptually incoherent any programme which attempts to construe mental state explanations in a causal manner. His most promising and frequently cited argument is the claim that there exists a "logical connection" between motives and their corresponding actions which does not hold for cause and effect relations. I identify four varieties of the logical connection argument and show that none constitute an effective rebuttal of a causal construal of mental state explanations. More particularly, I show that contrary to the typical philosophy of mind versions of this argument (1) mental states are properly conceived of dispositionally as low order theoretical entities; (2) the intentionality

feature of mental states is consistent with their natural science dispositional construal; and (3) statements about mental states as theoretical entities are often analytic, even though the states they designate are indeed empirical facts.

The second major set of objections raised by philosophers of mind against the causalist view of mental states holds that mental states cannot be construed dispositionally as theoretical properties, but instead are to be viewed as overt behavioral tendencies. Against this view I reason that (1) conditional expressions of observed behavior tendencies should properly be replaced by an expression form that designates unobserved properties; (2) that the distinction between natural science dispositions and mental states on the basis of the complexity of their actualizations does not bear up under close analysis; and (3) the lack of specificity of mental state descriptions does not render incoherent claims as to their presumed causal explanatory import.

In my press for a penetrative and nondoctrinaire examination of the philosophy of mind rendering of mental state explanations I make substantial use of the writings of W.W. Rozeboom on the semantical and epistemological character of theoretical concepts. By so doing I attempt to go beyond those counterarguments which effectively rebut the philosophy of mind position,

but which do so by staying within its traditional semantical and epistemological confines.

* * *

ACKNOWLEDGEMENTS

I am greatly indebted to Professor William W. Rozeboom both for the intellectual stimulus to develop the general approach taken here, and for his invaluable supervision of my dissertation.

To my external examiner Professor Robert H. Ennis, and also to Professor Allen J. Pearson, go my thanks for their many constructive criticisms.

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CHAPTER ONE

THE SCOPE OF SCIENTIFIC PSYCHOLOGY

Behaviorist Viewpoints

In its beginnings American psychology was characterized by an enthusiastic if unsuccessful attempt to study mental states from the vantage point of scientific or experimental method. A subject's introspectively-grounded verbal reports were assumed to afford reliable epistemological access to such mental states, the explication of which was deemed to be psychology's principal task. The subsequent dissatisfaction with the evidential security of a subject's first-person ascription of mental state characteristics provided much of the intellectual motivation for the behaviorist revolution. It was J.B. Watson[1] who first argued that psychology ought to be construed solely as a science of behavior. Introspective psychology's data base of "immediate experience" was to give way to a behavioral data base which assayed knowledge claims about psychology's subject matter against overt organismic movements and their relevant external environmental determinants. Behavioral psychologists to a one have followed suit: Skinner speaks of "... starting with behavior rather than immediate experience ...",[2] while Tolman claims that "... psychology does not seek descriptions and intercommunications concerning

immediate experience per se ... [But] rather, the objectively stateable laws and processes governing behaviour ...".[3] In like manner Hull warns that "... [hypothetical] constructs present grave theoretical hazards when they are not securely anchored to directly observable events ...".[4]

The widespread dissatisfaction with introspective methods saw an attendant casting out of mental states from the province of scientific psychology by virtually all behaviorists. Indeed, Skinner regards himself a radical behaviorist by virtue of eschewing anything which is mental.[5] Yet despite this received consensus on behavioristic's data base and the posture taken with regard to mental states, that movement has nevertheless occasioned much controversy over its legitimate subject matter. Skinner, himself a long standing exponent of radical empiricism, claims that psychology's scientific method "... is positivistic. It confines itself to description rather than explanation. Its concepts are defined in terms of immediate observations."[6] By refusing to admit theoretical entities Skinner restricts psychology's subject matter to its data base.[7]

But for some considerable time now, the restrictive empiricism of early-day behaviorism has been yielding to a more liberal view of psychology's subject matter. The writings of Tolman, Hull, and Spence, for example, all exhibit well a willingness to introduce theoretical

explanatory constructs to account for observed stimulus-response covariations. Hull exemplifies the sympathies of all three behavior theorists when he claims that "... intervening variables ... represent entities or processes which, if existent, would account for certain events in the observable molar world."[8]

A Philosophic Claim

To be sure, positivistic behaviorism's focus upon what can be observed has exerted an undeniably helpful influence upon the development of psychology as a science. But that movement and the less restrictive behavior theoretic viewpoint which grew inexorably from it, have by omission, placed psychology in a position where it has lost virtually all appreciation of the logic of mental concepts. While present-day psychology has scarcely begun to seek out the detailed workings of cognizant organisms, and furthermore, while it has much to learn in order that it do so successfully, there have been frequent indications within certain philosophical quarters that scientific psychology's slowly increasing preparedness to readmit mental states as legitimate subject matter is doomed to failure - not because of a present or anticipated lack of technical resources, but because such a programme is grounded upon a logically incoherent appreciation of what counts as an acceptable mental state explanation. This view holds that it is

common discourse, and not scientific explanation, that adequately endows us with sufficient conceptual resources for a proper construal of such motive explanations.

Philosophers who take this approach are variously denoted as mentalists, philosophers of mind, philosophical psychologists, or anti-determinists, and include such people as Gilbert Ryle, D.W. Hamlyn, R.S. Peters, A.I. Melden and Richard Taylor. Generally speaking, these ordinary language philosophers follow the lead of the later Wittgenstein when they claim that while it is legitimate for scientific psychology to speak of the causal explanation of movements, it is a category error to proffer such explanations when the explanantia are human actions. The following representative quotations speak to the category error involved.

> Movements ... cannot ... be a sufficient explanation of actions in causal terms because, as Popper has put it there is a logical gulf between nature and convention.[9]

> The set of concepts in terms of which [explanations of behavior] are naturally given is radically different from that in terms of which bodily movements are to be explained.[10]

> Men, unlike machines, sometimes have reasons, trifling or momentous, for some of the things they do, and this distinguishes them at the very outset as purposeful beings. For reasons are not causes, and cannot be construed as causes without the most violent distortion of both concepts.[11]

The philosophy of mind claim that "reasons cannot be causes" has been argued for in a variety of ways. The most promising and frequently cited argument - one which has been strongly attacked in the recent philosophical literature - is the claim that there exists a "logical connection" between motives and their corresponding actions, which does not hold for cause and effect relations. Melden, for example, vigorously argues that a causal explanation of an event is given by referring to the conditions which are responsible for bringing that event to pass. Such an explanation does not identify or characterize the event to be explained, for this information is known prior to the proffered explanation. However, motives do further characterize the actions they are invoked to explain; the individuation of a motive requires of us that we describe it as a motive <u>for</u> such and such an action; hence, it is a self-contradiction to suppose that the motive for a particular action is a cause of that action.[12]

A second, and common argument against a causal construal of mental state explanations is due to Ryle. In his influential book, The concept of mind, Ryle claims that "... to explain an action as done from a specified motive or inclination is not to describe the action as the effect of a specified cause. Motives are not happenings and are not, therefore, of the right type to be causes."[13] Philosophers of mind since Ryle have widely argued that motive expressions are dispositional in the sense that they do not designate real properties at all, but instead function as "inference tickets" which legitimate inferences from one factual statement to another; however, since an important class of causal statements are customarily thought to designate genuine existent properties, it is a logical error to cite motives as causes.

The "logical connection" argument, and the claim that "dispositions cannot be occurrent" appear then to be the philosopher of mind's chief reasons for judging as conceptually incoherent any programme which attempts to construe mental state explanations in a causal manner.[14] Despite the frequency with which the logical connection argument has been employed, it nevertheless remains obscure. It will, therefore, be the chief purpose of this paper to assess the logical force of this argument. Herein I shall argue that, while philosophers of mind are correct in claiming that mental

states generally exhibit an intentionality feature, their persistent efforts to provide a contra-natural science explication of such states is ill-founded.[15] While a number of philosophers of science have been able to effectively rebut those philosophy of mind arguments that speak against a causalist view of mental state explanations, their rebuttals have issued from the very metaphilosophical confines established by the philosophers of mind themselves. Thus, those criticisms that issue from a philosophy of science perspective have customarily grounded their counter-arguments on the traditional semantical and epistemological concepts employed by the philosopher of mind. To illustrate, one semantic-epistemological concern that the logical connection argument forces us to confront is the analytic/synthetic distinction. While endorsing a recently emergent view that this distinction is more properly thought of as one of degree rather than kind, philosophy of science critics, such as Alston and Fodor,[16] have nevertheless continued to challenge the philosophy of mind viewpoint from the familiar confines offered by a dichotomous rendering of the distinction. Inasmuch as the philosophy of mind analyses rest on a commitment to a hard and fast analytic/synthetic distinction, the philosopher of science has been able to effectively rebut these analyses without challenging the metaphilosophical presupposition of a sharp analytic/

synthetic divide. Nevertheless, the press for fundamental penetration on the issues that arise from consideration of mental state explanations requires the skilful exploitation of the most advanced resources contemporary philosophy can give us, however much more difficult this makes our task. In this regard I propose to make substantial use of the writings of W.W. Rozeboom on the semantical and epistemological character of theoretical concepts, in the hope that I can advance a nondoctrinaire examination of the logical connection argument. More particularly I shall show that contrary to the typical philosophy of mind rendering of this argument (1) mental states are properly conceived of as dispositional, i.e., low order theoretical entities; (2) the intentionality feature of mental states is consistent with their natural science dispositional construal; and (3) statements about mental states as theoretical entities are often analytic, even though the mental states they designate are indeed empirical facts. Furthermore, concern for the semantic character and epistemic origins of mental state concepts will bring us naturally to a consideration of the philosophy of mind claim which holds that dispositional interpretations of mental state ascriptions are properly construed as non-existent properties.

For the purposes of the present discussion I shall for the most part restrict my examination of the logical

connection argument to the writings of A.I. Melden. Perhaps he more than any other philosopher of mind has spoken most forcefully and in greatest detail on this particular argument. While his Free action has been endorsed by an earlier influential writer, R.S. Peters,[17] and influenced the recent important contribution by Richard Taylor,[18] Melden has, unlike them, briefly attempted to counter the objections raised by the opponents of the philosophy of mind position. It is for these reasons that I have chosen Melden's writings to represent the philosophy of mind viewpoint.

* * *

CHAPTER TWO

LOGICAL CONNECTION AS REDESCRIPTION

Conceptual and Ontological Claims

It has been argued by philosophers of mind in general that mental state explanations cannot be given a natural science interpretation. For Melden in particular, this is not to deny that human actions can be explained in a familiar and common sense way by citing motives, desires, reasons and the like. It is to deny, however, that such actions can be causally explained. But as Melden himself warns us there is little point to this claim unless we have precisely specified that sense in which the crucial term 'cause' is employed. In his own words it is the Humean view of causality that does not properly figure in action explanations. Now it may well be objected - and justly, I think - that Hume's reductionist, regular-succession conception of causality is a decidedly antiquated position to ascribe to contemporary empiricist natural science. However, throughout his Free action Melden speaks of a Humean cause as an "internal impression", and this would appear to go beyond the positivistic confines of Hume's predominant theory of causation, in that qua internal impression one could not observe a cause in conjunction with its presumed effect. However, it should be made clear that for Melden "... it matters not whether or no

we accept as adequate Hume's account of causation in the natural sciences - all that is important here is the recognition insisted upon by Hume that the natural events which are causally related are logically independent of one another."[1]

On the strength of this quotation, then, it would appear that so long as a natural science interpretation of causation satisfies the "logical independence" criterion, it cannot figure in a causal explanation of human action. For, as we saw briefly in chapter one, Melden takes motive and action to be "logically connected", the one to the other. But here too key terms like 'logical independence', 'logical dependence', and 'logical connection' are in dire need of detailed explication, if we are to adequately assess the cogency of the logical connection argument. I shall attempt to show that Melden employs such crucial terminology in a decidedly ambiguous manner, and that his arguments that make use of such terms, whatever the latter's meanings, do not support the charge of conceptual incoherence that he levels against causal interpretations of mental state explanations.

In the quotation above we note that Melden speaks of causally related natural events being logically independent of one another. While of late there has been some effort to elucidate the concept of 'event' we shall for present purposes foresake pretense at technical

rigor and regard events as occurrences, or a species of facts, or spatio-temporally bounded particulars. Now one may reasonably ask here whether it makes good sense to speak of events being logically independent, or logically dependent. For, the latter are logical relations which are more properly thought to hold between propositions (meanings) or derivatively, sentences (meaning vehicles), and cannot truly be predicated of extra-linguistic events themselves (except in the extended sense that propositions that designate these extra-linguistic events are logically related). Thus while it is strictly incorrect to speak of logical relations holding between events, it makes good sense to speak of logical relations holding between propositions (roughly, sentences, statements, expressions) which are <u>about</u> events. Now this semantical relation of aboutness appears to be predicated on the distinction between the <u>meaning</u> and <u>reference</u> of an expression. Ever since the pioneering work of Frege, philosophers of language have consistently insisted that the meaning of an expression is not the same as its referent. On Frege's own well-known example, 'The morning star' and 'The evening star' express different meanings although they are about the same referent - that is, Venus. While philosophers of language have differed amongst themselves over the details of this formulation, there is a fair consensus of opinion that expressions convey meanings which are

about, designate, or refer to entities. On this view it is the meanings themselves, and not the symbols which express those meanings, that most directly designate their referents.

It is largely as a result of confusing meaning and reference that philosophers of mind have rightly been criticized for doing scant justice to the distinction between ontological and conceptual claims. With respect to Melden's above quotation on causal events, it is important to be clear about whether it is intended literally as an ontological claim, or as a conceptual claim, or whether Melden has in fact slipped inadvertently from talking about a concept of causally related events into talk of the events themselves (or from the events to their conceptions thereof). The following excerpts, while about motives and actions, clearly suggest that Melden conflates conceptual and ontological claims.

> ... there is a logical connection between the concept of a motive and that of an action ... It remains therefore to exhibit the logical connection between motives and action ...[2]

> ... the connection between [motives, desires] and action is ... a logical connection, not causal. It is impossible to grasp the concepts of motive

and desire independently of the concept of an action.[3]

Be this as it may, we can I think, be quite confident in treating Melden's logical connection argument as a claim about our (common sense) conception of causes, motives, actions, etc., and not about the nature of the entities so designated. For, on Melden's own view, "Our business as philosophers is ... to analyze concepts, not to make quasi-empirical discoveries of events and their properties."[4] It is, he says, a "... fatal blunder /to/ ... convert ... a question about meaning into an extremely questionable view about matters of psychological occurrence ..."[5] Thus, Melden's formulations can, on pain of his prescription of the philosopher's role, be viewed as falling on the conceptual side of the conceptual/ontological divide. We may with justification dismiss his tendency to take ordinary language locutions as having import for the way their referents are in and of themselves.

Mental State Explanations as Redescription

Melden's claim that there is a logical connection between our concepts of motive and action follows from his belief that motive explanations, unlike their causal counterparts, redescribe or further characterize the

actions they are thought to explain. A motive is said to be a motive for some action; it tells us what the action is. A causal explanation, on the other hand, does not serve to further characterize the explained event, for we know what that event is prior to the explanation given. In his own words Melden claims "... this supposition [that] the motive for the action is the cause of the action ... is self contradictory. As the alleged cause of the action, it cannot serve further to characterize the action. As motive it must - for it tells us what in fact the person was doing."[6]

This argument has, I believe, been rightly criticized on two counts. First, as both Davidson and Fodor have noted,[7] effects are frequently redescribed or further characterized in terms of their causes - on Davidson's example, "We could redescribe this event [of someone being injured] 'in terms of a cause' by saying he was burned," - and there appears to be no argument on logical grounds that would prevent one from doing so. The second argument, presented by Alston[8] points out that only in particular circumstances does the motive more fully characterize the agent's action, namely, when the agent's motive is a motive to do something which is carried out simultaneously with the action that is being explained. Melden's oft-used example here is where a driver's intention to signal a turn explains the driver's raising his arm. Here the agent's raising

his arm is simultaneous with his action of signalling a turn. But, as Alston observes, there are many instances where an action is explained by a motive to do something quite different. Thus, one might well explain signalling a turn by declaring an intention to take my car to the garage, or one may explain his study behavior in terms of a desire to please one's parents, and so on; the examples are numerous. With these illustrations the proffered explanation does not more fully characterize the action, nor does it clearly specify for us what action the person was doing.

While these counter-arguments appear convincing, they are so only in as much as they operate from the confines of Melden's own argument paradigm, wherein it is considered correct to regard both movements and actions as events to be explained, each in their own appropriate way. The quotations from Melden, Peters and Richard Taylor, presented in the opening chapter, amply illustrate the widespread philosophy of mind claim that causal psychological explanations can account, not for human actions, but only for bodily motions or movements; and it is a thesis that Melden frequently asserts throughout his Free action; there Melden argues that to assume a motive explanation can be adequately captured by depicting the motive as a Humean cause of a bodily movement is an error: "... it is impossible to define the action of raising the arm in terms of bodily

movement plus motive, since the alleged motive ... has to be understood as the motive for some action performed or performable by the agent."[9]

I contend that Melden is mistaken in his claim that movements cannot properly be thought of as the explanantia of motive explanations. I shall endeavour to show that a careful examination reveals 'action' to be a theory-laden concept containing, if you like, the notions of both motive and bodily movement, and that with the motive/bodily movement distinction sustained, we can, in contradistinction to Melden, go on and legitimately speak of motives further characterizing the bodily movements to which they give rise.

Now the 'motive-plus-movement-equals-action' formulation is quite naturally obtained by regarding the motive/bodily movement distinction as an instance of the general metascientific theoretical/observational divide. Indeed Melden's error with regard to this formulation may be seen to result from affording insufficient attention to the methodological significance of the theoretical/observational contrast.

Recently, however, the tenability of this meta-theoretical distinction has been called into question. On the one hand there has developed a consensus of opinion protesting that a hard and fast observational/theoretical dichotomy must give way to a more scientifically realistic distinction of degree rather

than kind.[10] Even more remarkable though in this regard has been the "new historiographic", or "omnitheoretic" viewpoint,[11] as Rozeboom has called it, which asserts that prima facie observation terms are revealed upon closer inspection to be infused with the theoretical commitments of the system in which they partake, and thus cannot, as empirical realism would have it, serve as evidence for that system's theoretical claims. But, while it must be admitted that scientific observation statements are never entirely free from theoretical overtones - even our most immediate perceptual concepts house some inference - that fact does not provide warrant for the omnitheoretic claim that the observational/theoretical distinction is methodologically insignificant. For, as Rozeboom notes,

> ... to allege that no significant difference exists between observation and theory ... [Is] a retrograde mystique which has lost intellectual contact with the actual doing of science. As anyone who has ever engaged in serious research is acutely aware, the distinction between facts of which we are most certain - i.e. data - and the inferences which we attempt to draw from them is of utmost methodological importance, and a goodly proportion of the technical aspects of "scientific method" have been developed precisely to keep the

> perceptual beliefs with which scientific inferences begin as sharply distinguished from the conclusions to which they lead as humanly possible. Even if none of our observational concepts, scientific or otherwise, are altogether free of theoretical overtones, it does not follow that they prejudge the veridicality of every theory to which they are evidencewise relevant, and it is simply not true, even in ordinary life much less in technical science, that we can never perceive and describe an event without committing ourselves to one or another of rival theoretical interpretations of it.[12]

Granted the methodological significance of a relative theoretical/observational distinction, we may now usefully formulate our 'action' concept after the manner of Rozeboom's analysis of the concept of 'behavior'. In opposition to the popular view that we can readily tell by observation whether or not a particular organism is engaged in behavior, Rozeboom asks us to judge as behavior or not an actor's observed fall to the stage. He suggests that, while we would likely grant this fall behavioral status, we would be reluctant to do so for the floorward movement, if the actor had been hit to the stage with a ballast weight. Rozeboom concludes that reflection upon such examples

shows us that "... "behaviour" is not merely a change in the spatial loci of a living organism's bodily parts, but also requires that the change have a certain special kind of underlying cause. Thus to identify an organism's motions as behaviour is to make a judgement far richer in theoretical commitments than anything which could reasonably be called a pure observational report."[13] Similarly we may note that careful examination of the meaning of the term 'action' reveals it to contain not only the notion of an organism's observable bodily movement, but also the theoretical claim that such movements are due to a mental state of motive. When, for example, I say of an individual that he is signalling a turn, I am doing more than simply reporting my observation of the upward movement of the driver's arm. I am judging that movement to result from the driver having, say, an intention to signal a turn. This is indeed an inference, for I may well be quite mistaken; the driver might be intent upon stretching a stiff arm, baring it to the sun and so on. Amending Melden's phraseology we may declare, in direct opposition to his own claim, that 'action does equal motive plus movement'. Now without committing ourselves to the strong view that we cannot have explanations of actions, we can in the light of our own declaration reject Melden's claim that natural science causes explain no actions, but here it is for the very

reason that actions, taken under their proper conceptualization, take movements as the to-be-explained events with the theoretical mental entities constituting the (causal) explanations of those movements. In Rylean terms then, the category error committed by both Melden and his critics stems from construing motives necessarily as explanations of actions. What they have failed to realize is that motives, taken together with their movements, are indeed constitutive of actions.

We are now in a position to pass judgement on Melden's contention that causal explanations, unlike motive explanations, do not further characterize the events they are invoked to explain. If we accept the claim above that motives do not have to explain actions, but rather can sensibly be said to explain movements, then, on the grounds that motive explanations do more fully describe the events to which they give rise, it follows that motive explanations can be said to further characterize movements rather than actions. Put the other way around, we can say that in the light of the tenability of the theoretical/observational distinction one can properly speak of motives explaining bodily movements, and, since motive explanations further describe the events they explain, we can legitimately infer that motive descriptions do more fully characterize the bodily movements to which the motives give rise. But what can we say of causal explanations

on this score? For Melden, "Antecedently of the causal explanation given, we know quite well what the event thereby explained is. A causal explanation, in other words, does not give us a further characterization of the event thereby explained (except of course in the trivial sense that it characterizes it as an event that has a certain cause)."[14] But if an observer withholds judgement on the causal explanation of a to-be-explained behavioral event - an empiricist demand which is always attainable, if sometimes with difficulty - then that event will be regarded by that observer as an observed bodily movement. Prior to the proffered explanation, it is solely as bodily movement that we know an event. Now Melden does not wish to deny that causal explanations do further characterize the events that they explain, only that they do so trivially. But to further describe a bodily movement by causally explaining it as the effect of some event(s) is surely not trivial, for this is precisely the cognitive accomplishment that basic behavioral science research strives to attain. The psychologist, for example, is not merely interested in finding out that an organism responds in such and such a manner; he wants to characterize that responding as a joint function of, say, antecedent stimulus conditions and particular organismic states. To move from statements of the form 'Y (bodily movement, responses) occurred' to 'Y occurred

because of X (antecedent stimuli, organismic states)', or 'Y is the effect of cause X', or 'Y is causally explained by X' is to increase substantially our knowledge about Y. This I take to be a reasonable interpretation of the locution 'A cause further characterizes the event it explains'.

Melden's claim that there is a logical connection between our concepts of motive and action, in that motives further characterize the actions to which they give rise, makes definite methodological sense when it is amended to hold for statements about motives and movements. But if causal explanations further characterize the events they are invoked to explain, then there may fairly be said to be a logical connection between our concepts of motive and movement - a conclusion which Melden expressly wants to deny.

* * *

CHAPTER THREE

FURTHER SENSES OF 'LOGICAL CONNECTION'

Logical Connection as Ineliminable Reference

In the previous chapter we saw that, for philosophers of mind, locutions of the form 'motives are motives for actions' suggest a logical connection between our concepts of motive and action, in the sense that motives redescribe or further characterize the actions they are invoked to explain. However, similar expressions, appearing in a slightly different context, admit yet a further interpretation of the claim that there is a logical connection between statements relating motives to actions and/or their objects. Melden, for instance, writes as follows: "As Humean cause or internal impression ... /a desire/ must be describable without reference to anything else - object desired, the action of getting or the action of trying to get the thing desired; but as desire this is impossible. Any description of the desire involves a logically necessary connection with the thing desired."[1] Here Melden is employing what he takes to be the Humean prescription that a cause, being a distinct existent, must be describable without reference to anything else - its effect, its intended object, or whatever. "But", says Melden, "no account is intelligible that does not refer us to the thing desired".[2] It follows for him,

therefore, that a desire cannot be a Humean cause.

Melden's claim in the above quotation that any description of the desire involves a logically necessary connection with the thing desired is taken by himself to mean that any description of the desire must make reference to the object desired. But if we are to take Melden at his word this is clearly not the case. For it is entirely possible to proffer a definite description of a desire that does not designate the object of that desire: 'The desire o has (at t)' may legitimately be taken to (incompletely) describe the fact that o (at t) desires object x. This much is obvious and has been noted by Melden's critics.[3] Yet they have not stopped to ask themselves why Melden would want to assert that a characterization of a desire must make reference to the object desired. To be sure Melden himself is not particularly explicit on this point. However, a plausible interpretation is that a reference to objects serves more fully to characterize the desires, etc., that intend them. Consider the following statement from Melden: "Now even if a desire qua entity of any sort had intrinsic features of its own, these would seem to be distinct from its intentionality feature, the feature, namely, that consists in its connection with or relation to the object of desire."[4] Melden's claim is that the intentionality feature of a desire is not intrinsic but relational, and this, presumably, is his

foundation for the contention that a desire must be specified in terms of its object. But it does not follow from the fact that a desire intends an object that a desire must be specified in terms of its object. This becomes apparent when we consider Rozeboom's efforts[5] to identify and explicate the components of a cognition's intentionality. Briefly, Rozeboom distinguishes three elements of an intentional act: (1) a content; (2) frequently, though not without exception, an object; and (3) a mode. An intention's content is its meaning, while the object of an intention is what the meaning is about, that is, its referent. The mode of an intentional act is the manner in which the content is engaged. In the schema "x øs that p" 'ø' is a verb representing a "propositional attitude" or "intentional mode". However, ø can be instantiated by numerous verbs, for there are many ways that x can entertain p, that is, x can believe, desire, perceive, doubt, remember, etc., that p. It can now be appreciated that objects are not ingredients of desires themselves when we consider Rozeboom's claim that an intention's content is most aptly described as aboutness potential - that is, as something that would have an object were reality to contain one. Indeed recognition of the fact that desires and the like do not always have objects (readily admitted by Melden himself) should make it clear that objects are distinct existents that

contingently relate to their desires. As Rozeboom has pointed out, ordinary language's propensity to characterize cognitions relationally in terms of their objects is chiefly responsible for, and indicative of, an undesirable conflation of the object/content divide. However, once we have drawn this distinction clearly, then it can be appreciated that what most fundamentally characterizes a desire is not its object, but its content, namely, one of its features as a psychological attribute. If this is so, then specifying desires only in terms of their objects is not the optimal strategy to employ. For, if desires can be construed dispositionally as low order theoretical attributes, as will be argued in chapter five, then on the view of an empiricist epistemology we come to make inferences about them from the observed input/output covariations to which they give rise. For example, in both everyday life and in technical science we frequently attribute a solubility property to sugar from the fact that it dissolves when immersed in water. And our description of this dispositional property is characteristically oblique, precisely because we describe this property in terms of its test condition/test result conditional: for example, "solubility is that microstructural property that enables sugar to dissolve when it is placed in water". Similarly we specify desires (more precisely, their contents) <u>relationally</u> in terms of the

actions (movements) they potentiate when stimulated themselves, and not in terms of their objects. Thus we describe desires with a locution of the form: "a desire is that property which is responsible for the agent acting thus and so in this particular situation". Contrary to Melden's apparent position, then, it is simply not true that a description of a desire must make reference to the object of that desire, in order that it be most completely specified.

Logical Connection as Contextually Limited Entailment

Melden's claim for a conceptual or logical connection between desire and action (or the concepts thereof as he sometimes correctly puts it) has been interpreted by some opponents of the philosophy of mind position to be a relation of unrestricted logical entailment.[6] Here it is believed that, for Melden, a motive explanation, unlike a Humean or causal explanation, holds the occurrence of a desire to entail or guarantee the occurrence of the corresponding action. In criticism of Melden, Brodbeck, for example, asserts "... there is no logical implication between wanting-to-do-x and actually doing x ... the thought-of-doing-x [does not] logically entail doing-x ... The mental act of wanting-to-do-x is one fact. Doing-x is quite another and distinct fact. The former might on some occasions cause the latter."[7] Similarly, Goldberg

contends that "... it does not follow that the occurrence of [a desire] entails the occurrence of [the action] ... If I want to go to the theatre does it follow that I go to the theatre? There are at least some occasions when we don't do what we want to do. If so then the entailment cannot hold."[8]

But, Melden contends that the attribution to his writings of this strict sense of 'logical connection' is quite without warrant. Quite clearly, Melden has the right of it here, for nowhere does he state in his Free action that motives must invariably occasion the actions which they are invoked to explain. Indeed he seems to explicitly acknowledge that this need not be the case. He speaks, for example, of "... the fact that one does not always do what one wants to do",[9] and "... the fact that a person wants something entails that he wants to get it ... despite the fact that he may do nothing ... to get it ...".[10] Evidently, then, Melden does make provision for the possibility that an agent may have a desire and yet do nothing about it; and, moreover, such an acknowledgement does nothing to impugn the logical relatedness of motive and action.

The logical connection envisaged here has been described by Abelson as contextually limited entailment. The following quotations from Melden, Abelson, and Charles Taylor respectively, speak for this view of a logical connection between a particular want and doing,

even though one may not act on that particular want:

> Is it wanting in any sense in which we are familiar with this term if one wants but, even given the normal circumstances in which wants are manifested in deeds, one does nothing at all? The supposition does more than pose a radical change in the actual course of nature, rather, it presents us with circumstances in which our concept of a desire no longer has any application.[11]

> The true bond, it seems to me, is that of contextually limited entailment between motive and act ... Briefly, the point goes like this: Assume that Jones wants, intends, desires, or in some sense has a motive to open a window. What does this entail about what he will do? Well, it entails that he will open the window, but it does not entail this tout court. It entails that he will open the window provided that no reason arises for his not doing so ... and provided nothing prevents him ... The provisos here constitute the contextual limitation ... on the entailment between motive and act. To say "I want to open the window; nothing prevents me, and I have no reason or motive not to, not even the motive of laziness, but still, I won't open the window" is senseless.

What on earth could I mean by want?[12]

> ... we could not say that the intention was the causal antecedent of the behavior. For the two are not contingently connected in the normal way. We are not explaining the behavior by the 'law', other things being equal, intending x is followed by doing x, for this is part of what we mean by 'intending x', that, in the absence of interfering factors, it is followed by doing x. I could not be said to intend x if, even with no obstacles or other countervailing factors, I still didn't do it. Thus my intention is not a causal antecedent of my behavior.[13]

Preparatory to examining these quotations, it would seem desirable to remind ourselves that the claim for contextually limited entailment is best thought of as conceptual rather than ontological, despite frequent practices to the contrary. While, for example, Melden is on occasion insensitive to the conceptual/ontological divide ("... there is a conceptual linkage between desiring and doing (or, as I have put it elsewhere, a logical relation between the concepts of desire and action) ..."[14]) he does speak of "... an acknowledged logical relation of concepts ...".[15] Similarly, Abelson in the quotation above makes the ontological

assertion that a relation of contextually limited entailment holds between motives and acts, but in an earlier paper he writes that we must "... distinguish between the unrestricted logical implication that holds between a term and any part of its definition (as in bachelor-unmarried) and the contextually limited implication that holds only under standard conditions between a dispositional concept and its operational criteria."[16] Thus it would seem that we have no good reason to revoke our conclusion reached in the previous chapter that a logical connection is a relation between propositions and not facts.

Returning directly to the argument for contextually limited entailment, it must be noted that such a view accords much better with a scientific interpretation of natural regularity statements than does the strict entailment view. If one can correctly conceive of there being exceptionless couplings of motives and actions only by holding the laws of psychology to be strictly deterministic, then the unrestricted entailment view is surely wrong, for a popular view even among physicists speaks against a strictly deterministic view of the universe, and in the behavioral sciences stochastic laws are definitely the order of the day. Any scientifically viable interpretation of the logical relation between our concepts of motive and action must acknowledge and make provision for this fact.

Now the argument from contextually limited entailment holds that the statement 'if a person possesses a motive to perform some action, and there are no interfering factors that will inhibit that action, then the motive will issue in action' is an acceptable definiens for the term 'motive'. But, says Melden, "... Hume's independence requirement not only stipulates that a particular counterinstance to any causal law is always conceivable, it also asks us to grant the conceivability with respect to any causal law of such counterinstances being the universal rule."[17] Thus on this view a Humean causal interpretation of a motive explanation is "incoherent", or "senseless"; the concept of 'motive' no longer has any application.

It seems to me, however, that Melden's argument is defective, particularly in respect of his interpretation of Hume's independence requirement. First, the claim that the universality of counterinstances to a causal law is conceivable is undeniably true; because things might have been different from what they are, we can as a matter of fact countenance as a meaningful proposition the logical possibility that causes are never followed by their effects even though we take the content of that thought to be highly counterfactual, and thus false. But granted that we can conceive of a world with effectless causes, this possibility does not mitigate against the claim that motives are causes, for we can

also imagine a logically possible world in which no motive was ever followed by an action. It does no good to argue that it makes sense to conceive of universal counterinstances for cause/effect regularities, but that it is incoherent to think this way about motives and actions; both are logically possible in the sense that they can be entertained as meaningful propositions, but for which, on account of their empirical implausibility, the appropriate mode or propositional attitude is disbelief, rather than belief. What Melden can say then is that the claim 'a person has a motive to perform an action, but, in the absence of interfering factors, he does nothing about it', is meaningful, but false. That is, the statement, while intelligible, is not a viable prospect as an empirical claim about reality. Granted this, what then is the truth status of the claim that Humean causes are never followed by their effects? Surely this too is false, for while we can imagine the universality of such a claim, no level-headed empiricist would want to contend that the world is as this statement designates. It is a fact that causes tend to be followed by the effects that are occasioned by them; just as it is a fact that motives tend to result in the actions they serve to explain. The contextually limited entailment conception of motive and action as outlined by Melden, Abelson, and Charles Taylor has application precisely because it accords well

with the facts. Similarly, a causal regularity statement becomes empirically true when it corresponds to reality. The facts of the matter suggest a probabilistic conception of causal relation that captures the stochastic feature of natural regularities. If this reasoning is correct, then the contextually restricted logical relation that is thought by Melden to characterize our motive explanations only, does hold also under the causal interpretation of motives.

We have seen that the fundamental confusion of the argument from contextually limited entailment stems from insufficient attention to the distinction between conceptual and ontological statements and the consequent muddling of our concepts of 'meaning', 'truth', and 'fact'. Briefly, my analysis of this argument has turned on the presupposition that a statement is true if it designates a fact, but false, though meaningful, if it does not so designate a fact.[18] With these distinctions still in mind, let us finally look at the quotation from Charles Taylor above. In particular I am concerned with his argument that "... we could not say that the intention was the causal antecedent of behaviour for the two are not contingently connected in the normal way. We are not explaining the behaviour by the 'law', other things being equal, intending x is followed by doing x, for this is part of what we mean by intending x ...".[19] But it does not

follow from the fact that because our concepts of intention and behavior are logically related in a contextually limited way, the intentions and behaviors themselves cannot be causally related. Indeed I want to propose here that the contextually limited entailment view is logically true; it "... is part of what we mean by intending x ...". Moreover, the law statement "intending x, ceteris paribus, is followed by doing x" would seem to be a perfectly good non-technical candidate for subsumption under a Humean conception of causality. But whether a causal rendering of this statement be judged acceptable or not, it remains quite compatible with attempts to establish it as an empirical truth or falsehood, for particular cases. It would be decidedly aprioristic if our ordinary language conceptions of phenomena were allowed to go proxy for, and hence preclude, efforts to establish the full synthetic significance of the meanings we hold about such phenomena.

* * *

CHAPTER FOUR

LOGICAL CONNECTION AS THE ANALYTICITY OF MENTAL STATE EXPRESSIONS

Independent Description and Theoretic Inference

As a preliminary to discussing the analyticity of mental state expressions, I want to protest Melden's coupling of the Humean prescription that cause and effect must be describable (in some sense of that word) independently of each other, with the Humean interpretation of mental states as theoretical (i.e. unobserved) entities. That is, I want now to attend to the inconsistency noted at the outset of chapter three that to construe a Humean cause as an "internal impression" would appear to mark a break from the positivistic strictures of Hume's theory of causation. Briefly, I shall argue as follows: Hume espouses a positivistic or reductionist view of causation; and, this is consistent with his epistemological recommendation that causes must be specificable independently of their effects; furthermore, Melden is justified in attributing to Hume the view that desires are unobservables; however, the independent describability proposal is singularly inappropriate as an epistemological strategy for theoretical (i.e. explanatory, or ontological) inductions.

At the outset let it be noted that the attribution

of a positivistic conception of causality to Hume is essentially uncontroversial. Hume believed that one could exhaustively analyze the causal relation simply by accounting for the succession, contiguity, and constant conjunction of events. To be sure, inference was involved, but the inference was to like instances based on past experience, and not to unobserved properties or "occult qualities". Contemporary formulations of the Humean causal concept often capture its positivistic flavour by holding that a categorical causal statement can be adequately analyzed into a minimal conditional statement which is said to be either true or false by virtue of the observable properties that are designated by the antecedent and consequent of that conditional; or on another reading, the conditional licenses inferences about future cause and effect relations which are similar to those regularities already observed.[1] Hume's causal account, then, is explanatory only in the sense that particulars are subsumed under a universal generalization.

Now it follows from Hume's view of causation, that if cause and effect are contingently related, each is describable without reference to the other. For Melden, the independent describability criterion is the all important feature of a natural science construal of mental states; on a Humean interpretation, desires, for example, must be specified independently of the actions

they are invoked to explain.

But we note that for Melden, desires, intentions, decisions and so on are to be viewed as theoretical entities under their Humean rendition. That this is so can be seen in the following extracts from arguments in his Free action where he is at pains to establish the impropriety of such a Humean account of desires and the like:

> As Humean cause or internal impression ... (a desire) must be describable without reference to anything else ...
>
> ... deciding cannot possibly be an interior Humean cause of doing ...
>
> ... the way is open to a radical misunderstanding of desires, intentions, decisions, etc., as internal events that can operate in some sort of mechanism of the mind.
>
> (wanting and desiring) do not mark interior events that are the natural causes of bodily movements or actions ...[2]

Here it should be made quite clear that, although Melden's interpretation of the Humean account of

desires, intentions, etc., exceeds the restrictions of Hume's positivist account of causes as observed properties, it is entirely consistent with what Hume has to say about mental states. In a recent exegesis[3] on Hume's theory of dispositional properties, Bricke convincingly argues that Hume inconsistently subscribes both to a reductionist and a non-reductionist theory. Hume's reductionist interpretation of dispositional properties is held to stem in large part from subjecting them to a positivist epistemological analysis similar to the one he gives to causes, whereby they are identifiable by direct observation, while their non-reductionist construal is taken to follow from his commitment to a form of the principle of sufficient reason, namely, that every event has a cause and is, in theory, explicable. Thus, if a particular response is not explicable solely in terms of the observed stimulus conditions, then Hume would explain such a response by postulating an underlying dispositional property. Bricke argues that for Hume this non-reductionist viewpoint is applicable to "... linguistic abilities, traits of character, and other mental dispositions".[4] Similarly, in a study of Hume's theory of mental activity, Wolff argues that, in the Treatise, "Hume soon moves past this (reductionist) theory to a more complicated analysis of cognition, basing his account on a theory of mental propensities (where a) "propensity"

can be described as the disposition to develop a disposition, or as a "second-level" disposition."[5]

Granted that Hume does appear to conceive of mental states as dispositional (theoretical), and that the independent describability criterion is consistent with (if not a necessary condition for) his positivistic conception of causation, it certainly does not follow that this criterion is applicable to a non-reductionist or theoretic conception of mental states. Indeed, an appreciation of the epistemology of dispositional concepts shows that what is needed is, if you like, a dependent describability requirement not an independent describability requirement. I propose to make this point amply clear by providing a sketch of Rozeboom's pioneering work[6] which is directed toward uncovering the patterns of theoretic inference that scientists actually do employ. By receiving assent from both everyday and scientific discourse, such trans-statistical inference forms constitute strong testimony for a non-reductionist view of dispositions.

In contradistinction to the widespread belief that statistical induction is all of scientific inference, Rozeboom is convinced that both technical science and everyday life boast fundamental forms of trans-statistical or theoretic inference. Such inferences he has called explanatory or ontological inductions. These inductions are explanatory in that they "...

algorithmically transform datum premises of an appropriate kind into conclusions that say why the data are this way even when the inference's intuitive strength may well approach total conviction".[7] The algorithmic character of explanatory induction is considered important, for statements about a datum pattern give rise to a conception of its explanatory source, as well as its evidential justification. (Such a view would appear to call for a radical revision of the standard philosophy of science claim that there is no logic to "the context of discovery".) In his earlier paper Rozeboom advisedly called such inductions "ontological" in recognition of the fact that they enlarge the referential scope of scientific theory, by suggesting conceptions of entities which have a distinct existence over and above that of the data patterns they manifest.

Thus far, Rozeboom has identified and partially explicated the nature of two algorithms which transform the distinctive patternings of naturally restricted data regularities into observable indices of the underlying determinants which lawfully yield those observed regularities: parameter conversion which works upon between-variable consistencies, and factorial decomposition which operates on within-variable consistencies. Since our appointed concern is solely with the evolution of dispositional concepts we need concern ourselves only with parameter conversion. About this

Rozeboom writes:

> The data patterns upon which parameter conversion operates are those dealt with by traditional multivariate analysis, namely, where we have a set of two or more data variables $\underline{X}_1, \ldots, \underline{X}_n$ which have a particular constellation of values for each individual in a population P .... Some of these value constellations (i.e., conjunction of properties) generally occur in P more frequently than do others, and we describe the pattern of these co-occurrences by various parameters (e.g., means, variances, correlation coefficients) of the joint distribution of $\underline{X}_1, \ldots, \underline{X}_n$ in P. Now when a given distributional parameter takes a particular value for a given population P, this is logically a property of P as a whole, not of the individual members of P .... Yet when we observe that different populations P_i (i = 1, 2, ...) of a given natural kind are characterized by different values of the same distributional parameter for the same variables, we often find ourselves treating the value observed for this parameter in each P_i as an estimate of where <u>each member</u> of P_i individually stands on an underlying determinant of that individual's position in data space.[8]

Specifically, it is important to realize that the inference made from an observed covariation to its underlying source is so frequently habitual that we are often unconscious of the inference we do in fact make. It is this very point that may account for the seeming paradox that, although ontological induction abounds in both science and everyday life, it has virtually gone unnoticed as a fundamental form of scientific inference. In particular, as Rozeboom notes, the operationist conviction that purported theoretical terms could be explicitly defined in terms of observational statements may well have stemmed from this unawareness that generally accompanies low-order ontological inductions. It is important to realize that while the inductive immediacy of explanatory inference compels us to regard entities so obtained as factual rather than theoretical (hypothetical), they are nevertheless theoretical entities in that they are unobserved.[9]

The most typical instances of parameter conversion,[10] and this holds particularly for the behavioral sciences, are those where repeated observations through time are made on a single organism revealing some idiographically patterned input/output covariation. A parameter of stimulus/response covariation across a class of time-slices of an organism's history is taken as an index of some actual underlying hypothetical entity which disposes the organism to respond in the way

it does in the presence of the appropriate environmental input. For example, where the stimulus/response covariation is thought to mirror what is learned, the postulated entity may, depending on one's behavior theoretic preference, be variously regarded as a reflex or habit of particular strength or a reinforcement value, and so on. As values of state variables these relatively enduring properties are possessed by the organism not only throughout the stimulus/response covariation class of time-slices, but right throughout that extended time period. That is, state properties reliably persist independently of their process counterparts, even though the latter are used to diagnose the presence of the former.

Thus, it would seem that Melden's objection to a Humean causal interpretation of desires as theoretical entities will not stand up under close analysis. Melden's objection, it will be recalled, holds that under a Humean interpretation, and in contradistinction to a motive-explanation construal, desires must be described independently of their actions. But Rozeboom's detailing of the epistemology of theoretical entities reveals that descriptions linking them to their effects must be dependent or relational in nature. With his insistence upon the independent describability of cause and effect, Melden has taken a criterion so ill-suited for its epistemological purpose that, if used

in the way he proposes, it would have us eliminate our exterospectively-based knowledge claims about unobserved entities. The lesson philosophers of science have learned from positivism is that an epistemology that relegates statements about presumably theoretical entities to the limbo of metaphysics, and confines us solely to the study of observables, paints an unnecessarily impoverished view of scientifically reputable statements. On a (logical) empiricist natural science interpretation, desires, motives, and the like are described relationally by citing, inter alia, the presumed causal consequences which they serve to explain. In this regard they do not differ from contra-natural science motive explanations, wherein, Melden tells us, specification of the motive must make reference to the action it serves to explain.

The Analyticity of Mental State Expressions

In the remainder of this chapter I want to examine a view held by certain philosophers of mind that, since a person's behavior is frequently taken as the criterion for the ascription of mental states to him, it follows that there is a "logical connection" between statements that are about both mental states and behavior. I shall endeavour to show that critics of this view are correct in protesting the philosophy of mind claim that the logical relation between statements linking mental

states and behavior precludes their empirical establishment as cause and effect, but that they are in error themselves in supposing that such statements are not "logically connected" in some sense of this phrase.

The philosophers of mind who espouse this view of logical connection are those of Wittgensteinian or logical behaviorist persuasion. Of Wittgenstein himself, Chihara and Fodor assert he attempted "... to show that there do exist conceptual relations between statements about behavior and statements about mental events, processes, and states".[11] Similarly, Putnam claims that contemporary logical behaviorists hold "... /t/hat there exist /analytic/ entailments between mind-statements and behavior-statements; entailments which are not, perhaps, analytic in the way in which 'All bachelors are unmarried' is analytic, but that nevertheless follow (in some sense) from the meaning of mind words".[12]

The logical behavioristic claim for the analyticity of statements relating mental events to behavior is generally taken to preclude their establishment as empirical claims about cause and effect relations. The following passage from Richard Taylor affords an especially clear illustration of this point: "If ... we ask, in the case of <u>any</u> ... hypothetical that is seriously proposed as an expression of the relation between a cause and its effect, what might be the

criterion for deciding it is true, we find this criterion to be the very occurrence of that event which is supposed to be regarded as the effect, rendering the relationship embodied in the hypothetical, not the empirically discoverable one of a cause to its effect, but of a logical one of entailment between concepts."[13] Now opponents of this view that a logical relation between concepts bars those concepts from ever being about causal relationships have sought to attack such an anti-empiricist conclusion, not by disclaiming that it is supported by its premise that logical relations between concepts exclude their designating causal relations, but rather by contesting the truth of the premise itself. In other words, these critics have endeavoured to demolish the apriorism of the philosophers of mind by denying that principles relating behaviour and mental states are analytic at all. Alston, for example, objects to the programme of fashioning dispositional definitions in order to establish the analyticity of such principles. He declares "... it is not clear that our inclinations to think that there must be such a tendency whenever anyone wants something is based on some feature of the meaning of "want", rather than on a plausible theory, the truth status of which cannot be settled by reference to the meaning of terms."[14] And again, "... even if such psychological terms as "motive" are very similar to the

ordinary terms contained in such principles, it still would not follow that the principles of a Tolman-type theory would themselves be analytic. ... Not only would it not follow that such analytic principles could be constructed, it seems wildly implausible to suppose that they could. ... It seems incredible that combinations of the strengths of these factors should be analytically related to the performance of certain actions."[15]

Earlier it was noted that philosophers of mind are particularly guilty of conflating conceptual and ontological claims, despite occasional evidence of an awareness of the importance of the distinction. Thus, despite Melden's earlier caution that it is "... a fatal blunder /to/ ... convert ... a question about meaning into an extremely questionable view about matters of psychological occurrence", we have witnessed his repeated shifting from one side of the divide to the other. And here, in the Taylor quotation of the preceding paragraph, we seem to have a queer employment of the distinction, wherein statements that profess on the face of it to be ontological are, it is thought, more properly recast as conceptual. But, statements of psychological fact that purport to link wants as causes to the behaviour they help explain, cannot be regarded as statements about our conception of those facts at all. Rather, because of the epistemological fact that the

effect is the criterion for the ascription of a want our hypothetical relating actual cause and effect events is really an ontological statement of a relation between existents. But it does not follow from a statement of claimed fact that behavior is our criterion for the ascription of a want that all statements directly about cause and effect relations are more properly formulated as statements about concepts of particular causes and effects. Melden's aforegoing warning of the danger of transforming a statement about meaning into a statement about psychological fact is advice to be heeded, even when the transformation proceeds the other way around. That is, it is similarly disastrous to convert ontological assertions of psychological fact into assertions about the meaning of concepts that designate those facts. Alston surely has the right of it in protesting the philosopher of mind's tendency to construe ontological claims as being conceptual. He notes that insufficient attention to these two orders of discourse undoubtedly arises in part from a commitment to the dogma of "linguistic analysis" which asserts that philosophical questions about the nature of phenomena effectively reduce solely to questions about the meaning or use of the terms which prima facie are thought to designate such phenomena.[16] For example, this would appear to be Ryle's tack when he proceeds to conclude that certain psychological states are not occurrent

properties after showing that concepts which purportedly designate those states are non-occurrent or dispositional notions. But as Alston comments, Ryle's undertaking is essentially mistaken. For, even if we concede that certain of our mental concepts are correctly thought of as solely dispositional, it does not follow that the referents for these concepts are not actual states or occurrences. It hardly needs stating that, as a methodological recommendation, the dogma of linguistic analysis would, if implemented, have the effect of eliminating scientific psychology in favor of an a priori rationalistic alternative. For, under this directive we can cancel attempts to establish truthful ontological assertions about the empirical nature of the mental states in question, needing instead only to reflect upon the meanings of our (often mistaken) corresponding mental concepts.

But, granted the unsatisfactory maneuver by philosophers of mind regarding questions of psychological fact, can our belief in the importance of a conceptual/ontological divide be held only at the expense of denying the analyticity of principles relating mental states to behavior, as Alston seems to think? While a majority of opinion would concur with Alston, presumably on the grounds that statements judged analytic need not, and indeed would not, be judged empirically true at some later date, I believe it would

be a consensus in the wrong. I think that statements linking mental states and behavior can rightly be regarded as analytic and yet be about genuine factual existents, the subsequent empirical investigation of which may see the status of such claims be assessed as synthetic. My argument for this position will trade upon the analytic character of theoretical expressions, Rozeboom's case for which can profitably be adopted.

Theoretical analyticity is a startling semantical consequence which stems from the epistemological character of theoretical claims and can perhaps be most clearly seen through a logical empiricist analysis of scientific theories. Following Rozeboom we may regard as theoretical those scientific terms which lie outside of the science's data language, and derivatively, a scientific theory is taken to be the conjunction of all accepted statements that contain at least one theoretical term. "Then a scientific theory may be written as a (presumably complex) sentence, '$T(\tau_i,\ldots,\tau_n)$', in which the 'τ_i' are theoretical terms and the sentential matrix '$T(,\ldots,)$' contains only terms in the observation language. Accordingly an accepted theory may be regarded as an ascription of the observational predicate '$T(\phi_1,\ldots,\phi_n)$' to a set of otherwise unidentified entities designated by the theoretical terms 'τ_i','...','τ_n'."[17]

Now on this view the 'τ_i' are said to be <u>implicitly</u>

defined by the observational predicate '$T(\phi_1,\ldots,\phi_n)$', rather than explicitly defined by it. Under an explicit definitional interpretation the 'τ_i' are held synonymous with what under their implicit definition is regarded as their observation predicate, and take as their referents only those entities which are designated by the observation predicate. But this positivistic move is quite unsatisfactory. For one thing the 'τ_i' and their corresponding '$T(\phi_1,\ldots,\phi_n)$' cannot be regarded as synonymous for they are of different logical types - if '$T(\phi_1,\ldots,\phi_n)$' is predicated of the 'τ_i', then it cannot be equated with them. Furthermore, if the referents for the 'τ_i' must coincide with the observation predicate designation, as it must under explicit definition, then a theory which contains 'τ_i' is not permitted to extend its referential reach. However, an implicit definition of the 'τ_i' overcomes both of these limitations incurred by the explicit definition approach. For, the meanings given to the 'τ_i' by implicit definition are exhausted entirely by the observational predicate '$T(\phi_1,\ldots,\phi_n)$' which they instantiate, even though the 'τ_i' purport to and indeed may designate unobserved entities t_i. Thus for example, Hullian theory takes 'habit strength' ('$_SH_R$') to "... refer to whatever state of the organism grows as a function of reinforcement for doing R in the presence of S and interacts with deprivation conditions to determine

the probability of R-responding to S".[18]

But if the 'τ_i' designate t-entities we need not inquire further as to whether or not '$T(\tau_1,\ldots,\tau_n)$' is the case before asserting the truth of '$T(\phi_1,\ldots,\phi_n)$' for the 'τ_i'. For it is in the meaning of the 'τ_i' that any entities they purport to designate satisfy '$T(\phi_1,\ldots,\phi_n)$'. An implicit or theoretical definition of any 'τ_i' is thus analytically true, if true at all, where this theoretical analyticity is conditional upon the existence claim about the t-entities; while one may doubt that t-entities do in fact exist it makes little sense to hold that the 'τ_i' actually designate t-entities and at the same time be unwilling to admit that those entities exhibit ϕ-properties. Such a denial is, as Rozeboom has noted, akin to being in doubt about the marital status of bachelors.

Reverting to our previous example, if by the theoretical term 'habit-strength' we mean 'that state of the organism that grows as a function of reinforcement ... etc.' then such a statement is analytically true. That is, it is true by definition, if it is true at all, although such a definition will be implicit, not explicit. If habit strength is not as it is defined then our proffered definition will simply be false. It is important to realize that our conception of habit strength's relation to observables is analytic, even though this intraorganismic state is actually thought to

exist ontically distinct from them: the analyticity of this conception is entirely compatible with its subsequent establishment as a synthetic or empirical truth. Furthermore, the content of an analytic statement of the type exemplified through our habit-strength example can, where appropriate, be modified by the counterfactual claim that the theoretical entity is no longer to be conceived as it was originally. That is, while our initial conception of the theoretical entity stems from the observational predicate ascribed to it, we should not insist that our conception of that entity need retain it. Indeed as our conception of the theoretical entity evolves we will want to modify its observational predicate; for with such progress our initial stimulus/response covariation criteria will be refined and/or replaced by those criteria that are more usefully diagnostic of the entities to which they pertain. The point can be put more succinctly by saying that theoretical statements, while analytic, can signify logically contingent facts, whereas the traditional view of analyticity would have such statements signifying logically necessary states of affairs.

This last point brings us naturally to the question of just what can we say about the analyticity of a theoretical expression as it evolves? In particular, does a theoretical expression remain analytic as

additional observational criteria enrich our knowledge about the entity it so designates? And just how much empirical evidence is required before we can justly say that a statement of form 'A theoretical entity is responsible for its own observational criterion' is synthetically true? Rozeboom's suggestion is that "... a sentence's analyticity may not be an all-or-none affair, but a matter of degree, turning upon the extent and manner in which what it predicates of its subject is a criterion for the referent of the subject term".[19] If this is the case, then it follows that our conception of a theoretical entity obtained from its sole criterion will indeed be analytic. But even when it is replaced by more appropriate criteria, our initial statements of that entity may still remain minimally analytic. The analyticity of theoretical expressions, then, is considerably more sophisticated than the traditional all-or-none analyticity of the 'Bachelors are unmarried adult males' paradigmatic examples, suggesting that a different type of analyticity is involved here.

Now in the case of a dispositional construal of the term 'want', for example, we may say that, by this term, we mean 'that entity which is typically responsible for such and such a particular input/output covariation'. On this view our meaning of 'want' is, if true, analytically so; that is, it is true by (implicit)

definition.

Granted the analyticity of such statements relating behavior to mental events, what are we to say about the possibility of subsequently establishing the empirical or synthetic truth of these statements in particular instances? The traditional and still-received view has it that a statement is either analytic or synthetic; either it is true by virtue of the meaning of its constituent words, or it is empirically true as revealed by experimental test. Philosophers of mind almost to a one have fashioned their versions of the logical connection argument on a hard and fast analytic/synthetic distinction. Thus, in addition to the Taylor quotation above, we find Stoutland declaring "If the causal theory held that we distinguish intentions in terms of their possible effects ... then it would not be contingent that a given intention result in a given event ...".[20] Similarly, Abelson accepts qua alternatives Ayer's options for knowing what psychological state a person is in, viz.: "... the relation between a state s and its criterion C as either the law-like but contingent relation between two regularly associated facts (e.g. fever and bacterial infection), or as the analytic relation between a concept and its defining properties (e.g. being a bachelor and being unmarried)."[21] But, the philosophers of mind are not alone in this respect. We have seen

that Alston is prepared to deny the analyticity of statements relating behavior to mental states in order to ensure their synthetic significance. As an opponent of the philosophy of mind position Gean provides a particularly clear illustration of his thinking on the analytic/synthetic distinction when he writes "... any statement of ... a connection /between a person's wanting and doing/ will be, if true, only contingently so."[22]

However, on Rozeboom's view, statements relating mental states and behavior are analytically true, if true at all, even though they are about entities that do in fact exist. And it is of crucial importance for the purpose of the present analysis to realize that the analyticity of theoretical expressions proposed here in no way precludes their subsequent establishment as empirical truths. Thus, our analytic conception of 'want', as revealed through its appropriate input/output criterion, may eventually give way to the empirical discovery of knowledge about the entity so designated that is far more specifically informative than the relational 'wants are those entities responsible for such and such behavior' locutions. If the above account is essentially correct, and I think it is, then it shows that Alston's strategy of removing the apriorism of the philosophers of mind by denying the analyticity of dispositional definitions is somewhat too

severe. We need not be alarmed by admitting the philosopher of mind's logical behaviorist claim for the analyticity of statements connecting wants with behavior, for such a state of affairs is entirely compatible with the empirical investigation of wants. But, it should be obvious enough, also, that this sense of 'logical connection' does not constitute an effective argument against a scientific psychology intent on establishing causal relations between mental states and behavior.

* * *

CHAPTER FIVE

AGENCY, DISPOSITIONALITY, AND CAUSAL EXPLANATION

Agent and Disposition

In the immediately preceding three chapters I have attempted to unpack the ambiguity of the phrase 'logical connection' and show that in its various senses, the logical connection argument does not constitute an effective rebuttal of a causal construal of mental state explanations. It remains, therefore, to consider a second and major set of objections raised by philosophers of mind against the causalist view of mental states - viz. that mental states cannot be construed dispositionally as theoretical properties, but instead are to be viewed as overt behavioral tendencies.

However, before attending to the specific objections *per se*, it would seem appropriate to consider the merits of a claim made by Melden for the ineliminability of reference to agents when talking about mental state explanations. As Melden sees it, inattention to this claim is the fundamental flaw in the standard arguments for a causal model of human action, and, therefore, no less in the empiricist programme of formulating mental state concepts dispositionally.[1] He puts it in his own words as follows: "... all of the problems we have so far encountered ... arise from the basic failure to recognize the context within which alone our discourse

about desires makes sense. ... [A] reference to the agent seems to be ineliminable in our application of the term "cause" to desires: we speak not of a desire causing an action, but rather of it causing a person to act. The reference to persons - to agents - is no linguistic accident but the key to the understanding of the crucial concepts of desire, cause, and ... action itself."[2] Richard Taylor, too, notes that act descriptions must necessarily make reference to an agent. Of this he says, "... it does seem odd that philosophers should construe this natural way of expressing the matter as really meaning, not that I, but rather some event, process, or state not identical with myself should be the cause of that which is represented as my act. It is plain that, whatever I am, I am never identical with any such event, process, or state as is usually proposed as the "real cause" of my act, such as some intention or state of willing."[3]

Both Melden and Taylor seem to be suggesting here that agents, rather than the mental states they possess, most directly relate to the actions they bring about; more precisely, it is <u>subjects</u>, or <u>particulars</u>, and not the <u>attributes</u> they possess that immediately relate to their actions. But in chapter three we saw that it was a person's content, and not the possessor of that content that most directly intended or signified an object. Now when it is realized that the content or

meaning of a cognition is the attribute itself, it can readily be appreciated that it is the mental state, and not that to which it is predicated, that stands most immediately in a causal relation to its action. That the more efficacious formulation is to regard an individual's attributes, and not the individual qua particular, to be an immediate relatum in either an aboutness or causal relationship receives linguistic support which is apparent when we take everyday transitive expressions and recast them into a more precise counterpart.[4] Thus, for example, the common transitive locution 'x desires y' converts to some such locution as 'x has a desire for y'. The former expression, like so many ordinary language expressions, I take to be an ellipsis for its amended equivalent: it makes as though the desiring relation holds most directly between the agent and that which is desired, or in a causal context, between the agent and the action which satisfies the desire, while the amended expression is sensitive to the conceptual revelation that the agent intends an object, or act, only by virtue of his possessing that desire. While everyday speech habits are frequently, and for their purpose, usefully of condensed form, it would be a gross blunder to take the manifest grammar of such speech forms as our sole resource for fashioning responsible conceptions of human behavior. Such a proposal, would, if taken seriously,

rule a genuine cognitive psychology completely out of court, for on this view the human organism is essentially unanalyzable - it submits to analysis only as agent. But the cognitive (and non-cognitive) inner workings of an organism are more efficaciously regarded as theoretical entities (more precisely attributes) of that organism. Indeed, it is precisely because ordinary language glosses over such vital distinctions that we need to go beyond the grossness of its formulations. Casting common sense talk about psychological matters into their more detailed constructions is a linguistic maneuver that helps place us in a conceptual position, the adoption of which would appear essential to progress in the study of an organism's characteristics. I have constructed what I believe to be a more sensitive translation of the condensed expression, the manifest grammar of which suggests an entirely different conceptual picture from that suggested by the grammar of the condensed view. Even if the translation was not judged universally acceptable, it would surely be endorsed by some. Such dissent would only serve to reinforce the claim that grammatical form alone is not a reliable foundation upon which to build our understanding of human behavior.

While Taylor clearly draws the distinction between an agent and the state an agent possesses, he nevertheless conceives of explanations of mental phenomena as

holding between agent-as-particular and action. But for Melden the position appears less clear. From the above quotation it would seem that for him the ineliminable reference to agents is captured by replacing statements of the form 'desires cause actions' by those of form 'desires cause persons to act'. The former locution holds the desire-as-attribute to be the cause of an action, and for Melden this is objectionable presumably on the grounds that there is no expression that makes direct reference to an agent. However, phrases of the form 'desires cause actions' emerge as a natural consequence of focussing upon the psychological attributes of an organism that are of particular concern; it would seem absurd to suggest that an analysis of such features leads to a denial of an organism qua particular, for we do attribute these features to the subject which possesses them. Now, it may well be that, for Melden, 'desires cause persons to act' can be read as 'persons by virtue of their possessing desires bring about actions', whereby the latter expression conveys the notion that it is the desires that are directly responsible for the actions that are brought about. If this is the case then Melden, contrary to his professed intention, ends up siding with a natural science construal of mental states. Either way, the argument for the ineliminability of reference to agents as presented by Melden

does not constitute anything like a decisive objection to a natural science construal of mental state explanations. It does not, as he supposes, lead to a denial of the organism as particular, nor does it reveal as incoherent the natural science depiction of mental states as causal attributes.

Melden and Ryle on Dispositions

Following the publication of Ryle's important book The concept of mind, numerous philosophers of mind have readily adopted his general argument that reasons and the like cannot causally explain the actions they are thought to produce. In his own words, "Motives are not happenings, and are not therefore of the right type to be causes. The expansion of a motive-expression is a law-like sentence and not a report of an event."[5] More particularly, Ryle has argued that the categorical dispositional ascription of a mental state to an individual is not to say that the mental state is an unobserved attribute; it is merely to say that under suitable conditions the individual will respond in an appropriate way. Thus, if motive expressions do not designate unobserved occurrences, then they cannot be about causes.

For Ryle, then, the satisfactory explication of categorical dispositional statements reveals them to be of hypothetical form. Just as "... /to/ be brittle is

just to be bound or likely to fly into fragments in such and such conditions", so also "... to be a smoker is just to be bound or likely to fill, light and draw on a pipe in such and such conditions".[6] In each case the hypothetical is a law-like statement which serves as "... an inference-ticket ... which licenses its possessors to move from asserting factual statements to asserting other factual statements. It also licenses them to provide explanations of given facts."[7] But for Ryle such explanations are not causal-theoretic; rather, they are explanations in the sense that statements about particular events are subsumed under, or covered by, natural regularity statements. Ryle himself puts the point very clearly when he states, "The imputation of a motive for a particular action is not a causal inference to an unwitnessed event but the subsumption of an episode proposition under a law-like proposition."[8]

Now, if we can show that Ryle's analysis of categorical dispositional assertions into conditional expressions of observed behavior tendencies should properly be replaced by an expression form that designates unobserved properties, then we may fairly conclude that his argument from dispositions does not support the claim that motives and other mental ascriptions cannot figure in causal explanations of actions. It is to this task that I shall now turn.

Consider, first, Ryle's handling of those oft-discussed dispositional terms, 'solubility' and 'brittleness'. For him, "⟨to⟩ say that ... ⟨glass⟩ is brittle is to say that if it ever is, or ever had been, struck or strained, it would fly, or have flown into fragments. To say that sugar is soluble is to say that it would dissolve, or would have dissolved, if immersed in water."[9] On these examples, as with specifically human dispositions, a categorical dispositional ascription is exhaustively analyzed by unpacking the hypothetical proposition that is implicitly contained within it. Thus for Ryle it would appear that a proper explication of a categorical dispositional assertion should instance the following general scheme

(1) '$\underline{x}$ is øable' = $_{def}$'if $\underline{x}$ is ψd, then $\underline{x}$ øs'

where ψ and ø are the treatment and outcome conditions respectively for object $\underline{x}$, and the conditional is given other than an extensional or truth-functional interpretation. While there is room for disagreement over an explication of the meaning of 'If ..., then ...', the general consensus of opinion is that this expression is acceptable whenever it is given a subjunctive or counterfactual interpretation, whereupon it reads 'were ..., then would ...'. Now from an examination of a burgeoning philosophic literature on the problems

of subjunctive/counterfactual conditionals, it is evident that they are generally assumed to be declarative assertions, and thus can be said to be either true or false. But, more recently, Mackie,[10] Walters[11] and Rozeboom[12] have proposed that the function of such conditional if/thens is not to make declarative assertions, but to parse arguments. In recognition of this role, Rozeboom has termed the subjunctive/counterfactual if/then "dialectical". 'Were ..., then would ...' is a conditional argument, and not an indicative assertion. As such it functions to partition an argument into premises and conclusion. Furthermore, close analysis reveals such conditional arguments to be of condensed or incomplete form. In particular, 'Were ..., then would ...' is an enthymeme, the missing premise of which has to be supplied by context. 'Were ..., then would ...' is elliptical for something like 'Were ..., then because of the truth of the unstated premise, would ...'.

Now as Rozeboom notes, the meaning equivalence that is commonly assumed to hold between a categorical definiendum and a dialectical definiens cannot be maintained. In order to be judged synonymous, linguistic units must be interchangeable while preserving the same truth value. But it does not make good sense to talk about the truth value of an argument. Thus a categorical statement cannot properly be said to

be synonymous with a conditional argument. This criticism can be justly levelled against Ryle, for earlier remarks show quite clearly that he himself advocates a dialectical view of conditionals (cf. his 'arguing'/'reporting' contrast).[13] In formula (1) above '$\underline{x}$ is øable' is a categorical statement, while its conditional translation 'if $\underline{x}$ is ψd, then $\underline{x}$ øs' is an argument, thus the latter cannot serve Ryle's purpose as an explicit definition of the former.

But a more significant point noted by Rozeboom is that if the '$\underline{x}$ is øable' locution can be truly asserted of some but not all objects $\underline{x}$ then its conditional construal must be an ellipsis, such that 'ψ' entails 'ø' for $\underline{x}$ only in conjunction with the suppressed premise that '$\underline{x}$ has θ'. That is, if 'if $\underline{x}$ is ψd, then $\underline{x}$ øs' does not hold universally, there must be some property of $\underline{x}$ that brings about $\underline{x}$'s øing when ψd, such that we can say '$\underline{x}$ is øable' is true of those objects which possess property θ, and false for those objects that do not possess such a property. Now I want to maintain that recognition of this point constitutes a serious argument against Ryle's construal of dispositional conditionals. While Ryle takes such conditionals to be arguments, for him they are clearly not <u>condensed</u> arguments. Rather, they are merely conditional expressions of the treatment and outcome conditions respectively. On this view he is forced to

admit that all objects that ø when ψd satisfy the øability ascription - those that ø quite accidently of their possessing a θ, as well as those that ø when ψd in virtue of their possessing a θ property. Ryle cannot discriminate those objects that accidently ø when ψd, from those that ø when ψd because they have an enabling property θ. By denying that the 'is øable' predicate designates at all, he cannot say that the 'is øable' predicate is true of an object on account of it possessing property θ, and false for an object when it does not possess that property.

This unsatisfactory state of affairs can be seen quite clearly if we focus upon one of Ryle's own paradigmatic examples, such as brittleness of glass. We all agree that not all glass shatters when sharply struck. For, presumably there exists some actual property of glass that brings about its shattering at impact such that 'is brittle' can be truly predicated of glass objects that possess that brittleness property, but falsely predicated of glass objects lacking that property. The proffered explanation that a glass object was struck by an object will explain its shattering only when supplemented by the claim that the glass object was in a brittle state. The dialectical interpretation of the conditional makes provision for this talk about the brittle state by housing a suppressed premise that predicates that state of the

glass object. Under Ryle's minimal interpretation the conditional does not designate such a state at all. Ryle is thus placed in the awkward position of not being able to give a sufficient explanation of why glass breaks when struck. Neither will his view of the role of conditionals permit him to differentiate those glass objects that break accidently of their being struck from those that break when struck by virtue of being in a brittle state.

We have seen that, on their condensed argument interpretation, subjunctive/counterfactual conditionals house a suppressed premise which makes reference to an unobserved dispositional property θ which in turn enables $\underline{x}$ to ϕ when ψd. I want to argue, moreover, that contrary to Ryle's position, support for such a productivity claim comes from a common sense analysis of such familiar dispositional concepts as 'brittleness' and 'solubility'. If indeed this be the case, then on pain of Ryle's clear admission of the similarity of 'brittleness' and 'solubility' to psychological dispositional concepts, he must admit that referring expressions for the latter do in fact designate existent psychological properties. For Ryle, "... when we say that the glass broke when struck because it was brittle, the 'because' clause does not report a happening or a cause; it states a law-like proposition."[14] However, I want to maintain that common

sense does license a causal interpretation of 'because'. That is, we do in fact attribute a brittleness property to glass to explain why it breaks when struck with sufficient force. Generally we are not content with an explanatory account for which it suffices simply to cite the activating event. Indeed, we withdraw the imputation of a brittle property to glass which does not break when subjected to considerable stress, replacing it instead with a durability attribution. Similarly, a satisfactory analysis of a categorical assertion that an individual acts from such and such a motive cannot be accomplished solely by appeal to tendencies to act in suitable ways under appropriate circumstances. Rather, we almost unhesitatingly believe that the stimulating events lead to the action under question only in virtue of their activating an unobserved property which functions as the enabler of the action. Ryle's claim, then, that motive expressions do not, under their dispositional interpretation, designate unobserved causes does not appear to be particularly convincing, for we have seen that the telescoped argument view of dispositional conditionals does make provision for the place of actual dispositional properties, a conclusion furthermore that is quite consistent with everyday talk about mentalistic concepts.

I now want to claim that Melden, like Ryle, argues that reasons and the like cannot figure in causal

explanations of actions. To do so I shall focus upon a dispositional analysis of psychological concepts. However, while Ryle argues that motive concepts do not designate existent theoretical properties under their dispositional construal (conditionals do not designate at all), Melden attacks the view that motive expressions refer to theoretical attributes by denying their empiricist or theoretical interpretation, although he does appear to grant that motive expressions designate observable properties. In this regard, Melden declares of philosophers who explicate the concept of desire after the manner of natural science dispositions: "Such moves, I believe, are misguided, as much so as the attempt to explain the conceptual network in which our practical concepts of desire and action are fixed by employing the model of a theoretical formal theory, the basic propositions or axioms of which <u>implicitly define</u> the basic or primitive terms of the formal system by stipulating the conceptual structure in which each term has its place. Our concept of desire is a <u>practical</u>, not a <u>theoretical</u>, concept."[15] (italics mine). Although one cannot be certain, I do believe that for Melden the intended contrast here is observed/unobserved. For it is precisely in the face of a need to define theoretical (unobserved) terms, that a theory of implicit definition has been developed. Also, we have seen in earlier chapters that Melden does

characteristically suppose that desires as Humean causes are "interior events" or "internal impressions".

Presumably the aforegoing objections raised against Ryle's essentially positivist view of dispositions apply mutatis mutandis to Melden's belief that mental states can be observed. That is, the productivity role of desires-as-theoretical properties suggested by an examination of both the dialectical view of subjunctive/counterfactual conditionals and our common sense explication of dispositional predicates speaks strongly against a positivist construal of mental states. Melden's unwillingness to grant theoretic status to mental properties appears to be an instance of the widespread inattention ontological or explanatory induction has received as a fundamental form of scientific inference. It may be recalled that ontological inductions from observed covariations to underlying sources are so frequently habitual that one is often unconscious that theoretical inferences are actually made at all; and that it is this very characteristic that may well account for the seeming paradox that, although ontological induction is widely practised in both science and everyday life, it has been neglected as a legitimate form of inference. In particular, as Rozeboom has noted, the operationist conviction that purported theoretical terms could be explicitly defined in terms of observation statements

may well have stemmed from this unawareness that generally accompanies low-order ontological inductions. In this regard it is important to realize that the inductive immediacy of explanatory inference entitles us to regard entities so obtained as genuine existents distinct from their presumed causal consequences, even though they are nevertheless theoretical entities in that they are unobserved.[16] Thus, when Melden explains an action by citing the appropriate mental state, he is quite entitled to regard that mental state as a fact although he cannot, as he is wont to do, legitimately conclude that such a state is not a theoretical property.

If, as clearly seems to be the case, mental states can be construed as low-order theoretical attributes, then contrary to Melden's own view in the above quotation, the terms that designate these states are quite appropriately defined implicitly. But this assertion requires elaboration. First, it should be noted that the development of a theory of implicit definition brings us face to face with a logical empiricist analysis of theoretical concepts, for it has been philosophers of this persuasion who have most clearly recognized the limitations of the positivist attempts to reduce theoretical terms to an observation language, and who have sought to replace such a restrictive scheme by admitting the implicit definition

of theoretical terms. As a recent statement of a logical empiricist theory of implicit definition Rozeboom notes "... a theoretical term 't' introduced by the theory ("nomological net") 'P(t)' derives its meaning from predicate 'P( )' but designates something which satisfies the latter so long as there is any such entity. Thus if Hullian theory were correct, '$_{S}H_{R}$' would refer to whatever state of the organism grows as a function of reinforcement for doing R in the presence of S and interacts with deprivation conditions to determine the probability of R-responding to S."[17] Similarly mental state terms may be implicitly defined under their disposition-theoretic interpretation as those entities which bring about particular actions under certain circumstances. And, even though under this formulation their meanings are constituted solely by the observational predicate which they instantiate, such terms designate unobserved entities, if they designate at all. In general terms, then, a theory of implicit definition turns on the important logical empiricist distinction between the evidential basis and factual reference of knowledge claims.[18] With respect to dispositional concepts an empiricist epistemology regards the input/output covariations to be causally produced by the unobserved entities for which they serve as evidence. To conflate this distinction, as Melden himself appears wont to do, is to fall victim of the

strictures of the positivist programme that if something cannot be observed then it cannot correctly be said to exist.

A more specific objection to a natural science dispositional construal of mental states is taken by Melden when he observes that, desires, etc., unlike solubility and brittleness properties, are complex dispositions, the proper explication of which requires numerous hypotheticals. Melden puts the point his own way thus: "... /a/ desire is not an isolated disposition, which can be explained by only one hypothetical proposition; it is instead a complex of dispositions, the force of which can only be expressed by the combining of a relatively large number of hypothetical propositions."[19] Now, it might be said that this line of reasoning appears to receive some support from Ryle's own analysis of dispositional concepts. For, in The concept of mind Ryle notes that brittleness and the smoking habit "... are simple, single-track dispositions, the actualisations of which are nearly uniform", while "... the higher grade dispositions of people ... are, in general, not single-track dispositions, but dispositions the exercises of which are indefinitely heterogeneous".[20] But, while Ryle seems intent upon cautioning us against the view that all dispositions have uniform exercises, he clearly does not wish to differentiate natural science and psychological

dispositions on the basis of the complexity of their exercises. Indeed it is Ryle's express purpose to show that psychological predicates can properly be given a dispositional interpretation in the same way that 'is brittle' and 'is soluble' can, irrespectively of the complexity of the analysis.

In any case Melden, like Ryle, holds that 'brittleness' and 'solubility' can be satisfactorily analyzed by single conditionals. However, I believe that this view is open to serious doubt. Rozeboom,[21] for one, has drawn our attention to the difficulty involved in providing familiar disposition terms with precise analysantia. With regard to our two dispositional predicates 'brittle' and 'soluble', he notes that the relevant outcome events (breaking, dissolving) can be given with little difficulty. Rozeboom goes on to note, however, that it is almost impossible to specify exhaustively the necessary and sufficient conditions that constitute ψ such that an object appropriately ϕs when ψd. It is noted that, for 'solubility', which appears to be the best contender in this regard, taking 'ψ' be 'is-immersed-in-liquid' simply will not do. We need to specify the type, quantity, and temperature of the liquid, along with a detailing of the interface between liquid and tested object, and so on. Similarly, Hempel observes "... magnetization of an iron bar can manifest itself by the fact that iron filings

will cling to its ends; but also by the fact that one of its ends will attract the north pole, the other one the south pole of a compass needle; and no less by the fact that if the bar is broken in two, each of the parts will display the two kinds of disposition just described for the whole bar."[22] And Ryle[23] himself notes the multitude of hypotheticals to be unpacked when we describe an object as hard. Melden's distinction between natural science dispositions and mental states on the basis of the complexity of their actualizations simply will not bear up under close examination, for dispositions of an obviously natural science flavour, including one of Melden's test cases, do not seriously admit of a "single-track" interpretation.

Causal Explanation

In the final section of this concluding chapter I want to consider a frequently-voiced objection to the view that mental state explanations can be causal-theoretic. In general terms this objection centers around the fact that statements that purport to be of causal explanations make reference to mental states in a non-specific way, whereby the obliqueness of such expressions prevents them from being causally informative. Melden, for example, exhibits clearly his dissatisfaction with the oblique description of theoretical entities when he asserts "... we know well

enough how to describe ... [the mental state of depression] without being reduced to saying that it is the state that causes those who are in that state to act in such-and-such ways."[24] Further, the objection to the lack of specificity of description of entities which are characterized in terms of their input/output covariations, coupled as it is with the manifest circularity of assuming that the input together with the entity causally explain the output while using the input/output covariation as the evidential basis for that inference, seems to be part of the reason for the near-universal endorsement of Molière's judgement as a pseudo-explanation the attempt to explain the drowsiness of those who take opium in terms of its "sleep-inducing" or "soporific" power.[25]

I believe, however, that such widespread acceptance is a consensus in the wrong, and that it fails to appreciate an important natural consequence of an empiricist epistemology of theoretical entities - namely that reference to such entities is non-specific, oblique, or relational. This feature of the realist view of theoretical entities has been expressed by a number of writers. Armstrong, for instance, notes "... to speak of an object having a dispositional property entails that the object ... has some property ... which is responsible for the object manifesting certain behavior in certain circumstances. ... It is true

that we may not know anything of the nature of the non-dispositional state. ... Ignorance of the nature of the state does not affect the issue."[26] In a similar vein Harré writes "To ascribe a power to a thing or material is to say something specific about what it will or can do, but to say something unspecific about what it is."[27] And Rozeboom says, in criticism of the received view on the pseudo-explanation of drowsy behavior by appeal to the "dormative power" of opium, "The virtus dormitiva of opium is why people who take it, unlike most other substances, become drowsy. Of course, by itself that leaves a great deal still unknown about this power's nature, but learning of its existence and how to diagnose its presence/absence in particular cases is a necessary preliminary to pursuit of that knowledge."[28] It is important to realize that although we are frequently ignorant of the "intrinsic" or actual nature of internal causal conditions, that fact should not preclude our supposing that such conditions do exist, and that they have an important role to play in the causal production of behavior. Melden's objection to a relational construal of mental states is that "... these characterizations inform us, not of the presumed intrinsic features of desire but rather of their relation to other matters ...".[29] A relational construal "... hardly assists us in determining the character of the thing that persists or recurs".[30] It

seems quite clear that Melden rejects such oblique descriptions of mental states because he believes that the direct description of their features is possible. In this regard he states, "To the question "what sort of entities are desires that they cause persons to act as they do in getting or trying to get the things they desire?" our recourse should be ... to the facts in the matter that stare us in the face."[31] But while Melden categorically asserts that we are capable of providing adequate direct descriptions of mental states such as desire and depression, he in no way makes good his claim by giving us a sample of their admitted obvious features. But this is hardly surprising, for desires being dispositional properties are in general quite properly thought of as unobserved entities, indirect reference to which is made from their test condition/test result covariations.[32] When such covariations first give rise to our conception of their explanatory source, these very hypothesized entities are described solely in terms of the covariations that they serve to explain. When, for example, an appropriate circumstance/action covariation compels us to infer a desire as an explanatory property, its oblique description (that entity which produces, etc.) does not provide grounds for doubting either its factual reference or its presumed causal role. It is important to realize that while such an oblique description leaves much unsaid

about the specific nature of the unobserved desire, our first-stage enquiry about such an entity is designed to ascertain its causal presence under particular circumstances. However, recognition of this state of affairs does not of itself give cause for doubting that more specific descriptions of the entity may be forthcoming at a later date. For, having learned to correctly infer the existence of an entity from its presumed causal consequences under certain conditions, efforts are then made to determine the particular characteristics of that entity.

The characteristically non-specific descriptions of mental state properties can be further appreciated by briefly considering Rozeboom's recent formulation of the notion of a dispositions "base". Although contemporary discussions of dispositional concepts frequently assert that dispositions possess bases, in virtue of which objects have their dispositions, there appears to be a divergence of opinion on how best to formulate our understanding of the base properties θ that dispose x to ϕ if ψd. From a consideration of these viewpoints Rozeboom concludes that

> Our understanding of nomic (causal) determination is still profoundly obscure even though some such concept which is not reducible even to statistical probability much less Humean regularity appears

essential to the practical conduct of human affairs.[33]

Thus, rather than legislate what the nature of a disposition's base is to be, Rozeboom proposes that there exists a base relation B over attribute triples

(2) B (θ,ψ,ϕ)

where (B) is the "enables-to-bring-about relation" which serves as the explicated referent for the amended ellipsis of the subjunctive/counterfactual conditional in (1). More formally, the categorical assertion

(3) 'x is øable'

is analytically equivalent to

(4) $'(\exists\beta)\{\beta x \cdot B(\beta,\psi, \phi)\}$

Now with respect to the discussion at hand, it is important to note that nothing more is said about the nature of the base other than it stands in a B-relation to ψ and ϕ. Thus, for Rozeboom there is nothing in this "enables-to-bring-about" formulation that demands the base to be actual rather than potential (if such a distinction de re exists, which he doubts), a state

property rather than a process property, that it has some particular microstructure, or that it can be expressed categorically or in some sense that is logically independent of statements about ψ and ϕ. However, while this base-relation account does not require any such commitments it would be quite reasonable to take a stand on these particular issues. For my part I would want to say, first, that a disposition's base is actual rather than potential. It seems quite counterintuitive to propose an ontology of potentialities, for it is difficult to imagine that things exist over and above what is actual. In particular it should be realized that, if we are mindful of the semantical/existential divide, then we will not succumb to the mistaken view that, because a mental state is conceived dispositionally, it will not be a categorical property. Second, it would seem eminently plausible to suppose that a disposition's base is generally in fact a relatively enduring state property that persists over and above the occasions of its exercise. Generally speaking we would be quite reluctant to restrict our ascription of an ability predicate to an individual merely to those time-slices within which the ability was being manifest. Third, while our present linguistic resources do not readily allow us to refer to such dispositional properties solely in categorical terms, or to describe these

properties independently of 'ψ' and 'ϕ' statements, these moves are in principle possible. Finally, it may be said that, while we are not yet positioned to say what microstructural characteristics a base has, it is the very business of scientific psychology to reveal the psychonomic reality of a disposition's base, as well as more detailed nomic behavior.

From the aforegoing considerations, then, I conclude in opposition to Melden (and Ryle), that, conceived as ontologically induced dispositional properties, mental states can fairly be said to figure in causal explanations of behaviors for which they are deemed responsible even though their description is not specific. The lack of specificity of these state descriptions does not render logically incoherent claims as to their presumed causal import. Indeed it would seem that non-specific descriptions will necessarily characterize these unobserved entities when they are first thought to enter into causal relations.

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REFERENCES AND NOTES

CHAPTER ONE

[1]J.B. Watson, "Psychology as the behaviorist views it", Psychological Review, vol. 20 (1913), pp. 158-177.

[2]B.F. Skinner, "Behaviorism at fifty", Behaviorism and phenomenology, ed. T.W. Wann (Chicago, 1964), p. 84.

[3]E.C. Tolman, "Psychology versus immediate experience", Philosophy of Science, vol. 2 (1935), p. 356.

[4]C.L. Hull, Principles of behavior (New York, 1943), p. 29.

[5]Skinner, op.cit., p. 106.

[6]B.F. Skinner, The behavior of organisms (New York, 1938), p. 44.

[7]Actually a convincing case can be made for the claim that for Skinner psychology's subject matter subsumes its data base. In his The behavior of organisms Skinner made explicit use of "hypothetical middle terms" such as 'drive', 'state', and 'reflex reserve', which were to be abandoned only later. By 1945 ("The operational analysis of psychological terms", Psychological Review, vol. 52, pp. 270-277), Skinner had made provision in his system for inferring meaningful statements about private events from statements of their presumed publicly behavioral manifestations. Yet Skinner (op.cit., p. 102) has remained adamant in his disavowal for explanatory constructs: "An explanation is the demonstration of a functional relationship between behavior and manipulable and controllable variables ... A different kind of explanation will arise when a physiology of behavior becomes available. It will fill the gaps between terminal events ... It must be arrived at by independent observation and not inference ...".

[8]Hull, op.cit., p. 21. Note that for Hull (and for Tolman) intervening variables are hypothetical constructs in the sense defined by K. MacCorquodale and P.E. Meehl in their "On a distinction between hypothetical constructs and intervening variables", Psychological Review, vol. 55 (1948), pp. 95-107.

[9]R.S. Peters, The concept of motivation (London, 1958).

[10]D.W. Hamlyn, "Causality and human behavior", Aristotelian Society Proceedings, suppl. vol. 38 (1964), p. 130.

[11]R. Taylor, Action and purpose (Englewood Cliffs, 1966), pp. 261-262.

[12]A.I. Melden, Free action (London, 1961), p. 88.

[13]G. Ryle (New York, 1949), p. 113.

[14]It should be noted at this point that I employ the general label 'philosophy of mind' to characterize that view in philosophy which balks at a causal-scientific construal of mental phenomena. Conversely, the 'philosophy of science' tag is used to signify those philosophers who favor a causal-scientific depiction of the mental, even though some of these philosophers (e.g., D.M. Armstrong, A materialist theory of the mind) are not, technically speaking, philosophers of science.

[15]The qualification "generally" is used advisedly here, for, if space permitted, I would argue that intentionality is not definitive of mental states, though mental states are paradigmatically intentional. That is, most, but not all mental states are about existent or non-existent objects. Herein I am principally concerned with mental states that do exhibit an intentionality feature.

[16]See, for example, W.D. Alston, "Wants, actions, and causal explanation", Intentionality, minds, and perception, ed. H. Castaneda (Detroit, 1966), pp. 301-356; J.A. Fodor, Psychological explanation (New York, 1968).

[17]R.S. Peters, "Emotions, passivity, and the place of Freud's theory in psychology", Scientific psychology, ed. B.B. Wolman and E. Nagel (New York, 1965), p. 365.

[18]Taylor, op.cit.

CHAPTER TWO

[1]A.I. Melden, Free action (London, 1961), p. 105.

[2]Ibid., p. 83.

[3]Ibid., p. 171.

[4]Ibid., p. 174.

[5]Ibid., p. 175.

[6]Ibid., p. 88.

[7]D. Davidson, "Actions, reasons, and causes", The Journal of Philosophy, vol. 60 (1963), pp. 685-700; J.A. Fodor, Psychological explanation (New York, 1968), pp. 33-34.

[8]W.P. Alston, "Wants, actions and causal explanation", Intentionality, minds, and perception, ed. H. Castaneda (Detroit, 1966), p. 317.

[9]Melden, op.cit., p. 77.

[10]See, for example, G. Maxwell, "The ontological status of theoretical entities", Minnesota Studies in the Philosophy of Science, vol. 3, ed. H. Fiegl and G. Maxwell (Minneapolis, 1962), pp. 3-27; P. Achinstein, Concepts of science (Baltimore, 1968); W.W. Rozeboom, "The art of metascience", Toward unification in psychology, ed. J.R. Royce (Toronto, 1970), pp. 53-160.

[11]Pioneering contributions to the omnitheoretic viewpoint include: N.R. Hanson, Patterns of discovery (Cambridge, 1958); T.S. Kuhn, The structure of scientific revolutions (Chicago, 1962); P.K. Feyerabend, "How to be a good empiricist - a plea for tolerance in matters epistemological", Philosophy of Science: The Delaware Seminar, vol. 2, ed. B. Baumrin (New York, 1963), pp. 3-39. For extensive criticisms of this stance see D. Shapere, "Meaning and scientific change", Mind and cosmos: Essays in Contemporary Science and Philosophy, ed. R.G. Colodny (Pittsburgh, 1966), pp. 41-85; I. Scheffler, Science and Subjectivity (Indianapolis, 1967).

[12]Rozeboom, op.cit., p. 67.

[13]Ibid., pp. 66-67.

[14]Melden, op.cit., p. 88.

CHAPTER THREE

[1]A.I. Melden, Free action (London, 1961), p. 114.

[2]Ibid.

[3]See, for example, B. Goldberg, "Can a desire be a cause?", Analysis, vol. 25 (1965), pp. 70-73; A.I. Goldman, A theory of human action (Englewood Cliffs, New Jersey, 1970), p. 110.

[4]A.I. Melden, "Desires as causes of actions", Current philosophical issues, ed. F.C. Dommeyer (Illinois, 1966), p. 137.

[5]W.W. Rozeboom, "Problems in the psycho-philosophy of knowledge", The psychology of knowing, ed. J.R. Royce and W.W. Rozeboom (New York, 1972), pp. 25-129.

[6]Melden ("Desires as causes ...", op.cit., p. 130) is clearly in error when he charges Kaufman ("Ability", The Journal of Philosophy, vol. 60 (1963), p. 542) with interpreting 'logical connection' as 'strict entailment', for on the same page Kaufman states "... to assert that someone has a certain ability entails that, if he tries to exercise his ability, he will meet with at least occasional success".

[7]M. Brodbeck, "Meaning and action", Philosophy of Science, vol. 30 (1963), pp. 309-324. Reprinted with minor revisions in Readings in the philosophy of the social sciences, ed. M. Brodbeck (New York, 1968), p. 75.

[8]Goldberg, op.cit., pp. 71-72.

[9]Melden, Free action, p. 127.

[10]Ibid., p. 141.

[11]Melden, "Desires as causes ...", op.cit., p. 133.

[12]R. Abelson, "Doing, causing, and causing to do", The Journal of Philosophy, vol. 66 (1969), p. 133. See also his "Persons, P-predicates and robots", American Philosophical Quarterly, vol. 3 (1966), pp. 309-311.

[13]C. Taylor, The explanation of behaviour (London, 1966), p. 33.

[14]Melden, "Desires as causes ...", op.cit., pp. 129-130.

[15]Ibid., p. 135.

[16]Abelson, op.cit., p. 309.

[17]Melden, "Desires as causes ...", op.cit., p. 132.

[18]For a discussion of these concepts and their interrelationships see W.W. Rozeboom, "Intentionality and existence", Mind, vol. 71 (1962), pp. 15-32.

[19]Taylor, op.cit., p. 33.

CHAPTER FOUR

[1]A classic statement of this latter interpretation is G. Ryle's "inference ticket" view of conditionals contained in his The concept of mind (New York, 1949).

[2]These four statements by Melden that suggest desires are theoretical entities under a Humean interpretation are from pages 114, 203, 202, and 144 respectively in his Free action.

[3]J. Bricke, "Hume's theories of dispositional properties", American Philosophical Quarterly, vol. 10 (1973), pp. 15-23.

[4]Ibid., p. 21.

[5]R.P. Wolff, "Hume's theory of mental activity", The Philosophical Review, vol. 69 (1960), p. 293.

[6]W.W. Rozeboom, "Ontological induction and the logical typology of scientific variables", Philosophy of

Science, vol. 28 (1961), pp. 337-377, and "Scientific inference: The myth and the reality", Science, psychology, and communication: Essays honoring William Stephenson, ed. R.S. Brown and D.J. Brenner (New York, 1972), pp. 95-118.

[7]Ibid., p. 107.

[8]Ibid., p. 108.

[9]For an examination of the claim that entities may be unobserved, yet factual, see W.W. Rozeboom, "The art of metascience", Toward unification in psychology, ed. J.R. Royce (Toronto, 1970), pp. 53-160.

[10]The other common form of parameter conversion occurs when the observation of a class-property is taken as evidence of a source attribute possessed by each member of that class.

[11]C.S. Chihara and J.A. Fodor, "Operationalism and ordinary language: A critique of Wittgenstein", American Philosophical Quarterly, vol. 2 (1965), p. 282.

[12]H. Putnam, "Brains and Behaviour", Analytic Philosophy, Second Series, ed. R.J. Butler (Oxford, 1965), p. 3.

[13]R. Taylor, Action and purpose (Englewood Cliffs, New Jersey, 1966), p. 51.

[14]W.D. Alston, "Wants, actions, and causal explanation", Intentionality, minds, and perception, ed. H. Castaneda (Detroit, 1966), p. 332.

[15]Ibid., p. 339.

[16]W.D. Alston, "Dispositions and occurrences", Canadian Journal of Philosophy, vol. 1 (1971), pp. 125-154. This essay contains an insightful discussion of a perpetration of the conceptual/ontological muddle by Ryle and many of his critics.

[17]W.W. Rozeboom, "Studies in the empiricist theory of scientific meaning", Philosophy of Science, vol. 27 (1960), p. 360.

[18]W.W. Rozeboom, "Problems in the psycho-philosophy of knowledge", The psychology of knowing, ed. J.R. Royce and W.W. Rozeboom (New York, 1972), p. 70.

[19]W.W. Rozeboom, "The synthetic significance of analytic statements: A reply to Professor Putnam", p. 7. Presented at the American Association for the Advancement of Science meeting in December 1961, as a discussion commentary on Putnam's paper "Brains and behavior".

[20]F. Stoutland, "The logical connection argument", American Philosophical Quarterly, Monograph No. 4, Studies in the theory of knowledge (1970), p. 125.

[21]R. Abelson, "Persons, P-predicates and robots", American Philosophical Quarterly, vol. 3 (1966), p. 309.

[22]W.D. Gean, "Reasons and causes", Review of Metaphysics, vol. 19 (1966), p. 679.

CHAPTER FIVE

[1]Melden's claim that the argument for the ineliminability of reference to agents counts against a natural science dispositional construal of mental states is to be found in his "Desir et action", Les Etudes Philosophiques (1964), pp. 358-359.

[2]A.I. Melden, "Desires as causes of actions", Current philosophical issues, ed. F.C. Dommeyer (Illinois, 1966), pp. 146-147.

[3]R. Taylor, Action and purpose (Englewood Cliffs, New Jersey, 1966), p. 111.

[4]For an appreciation of the conceptual payoff of such a linguistic move I am indebted to W.W. Rozeboom's discussion of the same in his "The art of metascience", Toward unification in psychology, ed. J.R. Royce (Toronto, 1970), pp. 82-83.

[5]G. Ryle, The concept of mind (New York, 1949), p. 113.

[6]Ibid., p. 43.

[7]Ibid., p. 121.

[8]Ibid., p. 90.

[9]Ibid., p. 43.

[10]J.L. Mackie, "Counterfactual and causal laws", Analytical philosophy, ed. R.J. Butler (Oxford, 1962), pp. 66-80.

[11]R.S. Walters, "The problem of counterfactuals", Australasian Journal of Philosophy, vol. 39 (1961), pp. 30-46.

[12]W.W. Rozeboom, "Dispositions revisited", Philosophy of Science, vol. 40 (1973), pp. 59-74.

[13]Ryle, op.cit., pp. 122-123.

[14]Ryle, ibid., p. 89.

[15]A.I. Melden, "Desires as causes of actions", Current philosophical issues, ed. F.C. Dommeyer (Illinois, 1966), p. 143.

[16]For an examination of the claim that an unobserved property may be accorded factual status see W.W. Rozeboom, "The art of metascience", Toward unification in psychology, ed. J.R. Royce (Toronto, 1970), pp. 53-160.

[17]W.W. Rozeboom, "Problems in the psycho-philosophy of knowledge", The psychology of knowing, ed. J.R. Royce and W.W. Rozeboom (New York, 1972), p. 70.

[18]A discussion of this distinction is contained in H. Feigl, "Some major issues and developments in the philosophy of science of logical empiricism", Minnesota Studies in the Philosophy of Science, vol. 1, ed. H. Feigl and M. Scriven (Minneapolis, 1956), pp. 3-37.

[19]Melden, "Desir et action", op.cit., p. 354.

[20]Ryle, op.cit., pp. 43-44.

[21]Rozeboom, "Dispositions revisited", op.cit., p. 60.

[22]C.G. Hempel, Aspects of scientific explanation (New York, 1965), p. 460.

[23]Ryle, op.cit., p. 44.

[24]Melden, "Desires as causes ...", op.cit., p. 136.

[25]While the virtual unanimity of philosophic opinion accords with Molière on this point, I have, thus far, encountered only two dissenting voices, viz.: R. Harré, "Powers", British Journal for the Philosophy of Science, vol. 21 (1970), pp. 89-90; and Rozeboom, "Dispositions revisited", op.cit., p. 67.

[26]D.M. Armstrong, A materialist theory of the mind (London, 1968), p. 86.

[27]Harré, op.cit., p. 85.

[28]Rozeboom, "Dispositions revisited", op.cit., p. 67.

[29]Melden, op.cit., p. 137.

[30]Ibid.

[31]Ibid.

[32]In qualification it should be noted that it is quite possible for a dispositional predicate to designate a property which, on grounds other than its test condition/test result covariations, we are entitled to think of as observational.

[33]Rozeboom, "Dispositions revisited", op.cit., p. 65.